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PATENT
ATTY. DKT. NO. 129836

OIPE JC10 MAY 27 2004 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Toan T. Le et al.

Serial No.: 10/678,839

Filed: October 3, 2003

For: SYSTEMS AND METHODS FOR IMPROVING USABILITY OF IMAGES FOR MEDICAL APPLICATIONS

Art Unit: 3726

Examiner:

CERTIFICATE OF MAILING

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Thomas M. Fisher, Reg. No. 47,564

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following are submitted in the above application in compliance with 37 CFR 1.97 and 37 CFR 1.98.

☒ 1. A list of documents on Form PTO-1449 or Substitute together with copies of each identified document and a translation thereof or a concise explanation of each non-English language document or a Search Report or communication from a non-US patent office or an International Search Report from an International Searching Authority for a patent application filed via the Patent Cooperation Treaty or document(s) cited in the application or the priority application.

This paper is submitted in accordance with:

☒ 2. 37 CFR 1.97(b): [within three months of national, non-CPA filing, prior to first Office Action, on the merits, or prior to first office action after filing an RCE]

☐ 3. 37 CFR 1.97(c): [before Final Office Action, Allowance, or other action closing prosecution, whichever is earlier]; and

☐ a. The required Certification made in item 5 below; or
☐ b. The $180.00 fee specified in 37 CFR 1.17(p) for submission of this Information Disclosure Statement is authorized in item 6 below.

☐ 4. 37 CFR 1.97(d): [on or before issue fee payment]; and

☐ a. The required Certification is stated in item 5 below; and
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☐ 5. Certification

☐ a. Each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of this Statement; or
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☐ 6. Payment of all applicable fees:

☒ Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. 01-2384.
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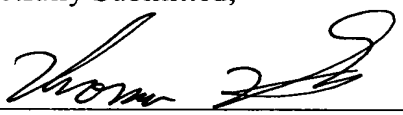
Respectfully Submitted,



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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 6

Complete if Known	
Application Number	10/678,839
Filing Date	October 3, 2003
First Named Inventor	Toan T. Le et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	129836

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US-3,861,807	01/21/75	Lescrenier	
	AB	US-3,871,360	03/18/75	Van Horn et al.	
	AC	US-3,952,201	04/20/76	Hounsfield	
	AD	US-4,031,884	06/28/77	Henzel	
	AE	US-4,262,306	04/14/81	Renner	
	AF	US-4,463,425	07/31/84	Hirano et al.	
	AG	US-4,994,965	02/19/91	Crawford et al.	
	AH	US-5,080,100	01/14/92	Trotel	
	AI	US-5,271,055	12/14/93	Hsieh et al.	
	AJ	US-5,279,309	01/18/94	Taylor et al.	
	AK	US-5,295,483	03/22/94	Nowacki et al.	
	AL	US-5,315,630	05/24/94	Sturm et al.	
	AM	US-5,389,101	02/14/95	Heilbrun et al.	
	AN	US-5,394,875	03/07/95	Lewis et al.	
	AO	US-5,446,548	08/29/95	Gerig et al.	
	AP	US-5,538,494	07/23/96	Matsuda	
	AQ	US-5,582,182	12/10/96	Hillsman	
	AR	US-5,603,318	02/18/97	Heilbrun et al.	
	AS	US-5,727,554	03/17/98	Kalend et al.	
	AT	US-5,764,723	06/09/98	Weinberger et al.	
	AU	US-5,784,431	07/21/98	Kalend et al.	
	AV	US-5,823,192	10/20/98	Kalend et al.	
	AW	US-5,836,954	11/17/98	Heilbrun et al.	
	AX	US-5,954,647	09/21/99	Bova et al.	
	AY	US-6,138,302	10/31/00	Sashin et al.	
	AZ	US-6,146,390	11/14/00	Heilbrun et al.	
	BA	US-6,165,181	12/26/00	Heilbrun et al.	
	BB	US-6,185,445B1	02/06/01	Knüttel	
	BC	US-6,185,446B1	02/06/01	Carlsen, Jr.	
	BD	US-6,198,959B1	03/06/01	Wang	
	BE	US-6,370,217B1	04/09/02	Hu et al.	
	BF	US-6,621,889B1	09/16/03	Mostafavi	
	BG	2002/0023652 A1	02/28/02	Riaziat et al.	
	BH	2003/0007593 A1	01/09/03	Heuscher et al.	
	BI	2003/0063292 A1	04/03/03	Mostafavi	
	BJ	2003/0072419 A1	04/17/03	Bruder et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 6

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Application Number	10/678,839
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Art Unit	Not Yet Assigned
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Attorney Docket Number	129836

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	BK	DE 43 41 324 A 1	06/08/95	Germany		
	BL	79458	09/29/89	Finland		
	BM	WO 98/16151	04/23/98	PCT		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	BN	Peltola, Seppo M.Sc.; "Gated Radiotherapy To Compensate For Patient Breathing"; *Proceedings of the Eleventh Varian Users Meeting*; Macro Island, Florida; May 11-13, 1986.	
	BO	Mah, Katherine, et al.; "Time Varying Does Due To Respiratory Motion During Radiation Therapy Of The Thorax"; *Proceedings of the Eighth Int'l Conference on the Use of Computers In Radiation Therapy*; Toronto, Canada; July 9-12, 1984; pp. 294-298.	
	BP	Mori, Masayuki, et al.; "Accurate Contiguous Sections Without Breath-Holding On Chest CT: Value of Respiratory Gating and Ultrafast CT"; *AJR:162*, May 1994; pp. 1057-1062.	
	BQ	Robinson, Terry E., et al.; "Standardized High-Resolution CT of the Lung Using A Spirometer-Triggered Electron Beam CT Scanner"; *AJR:172*; June 1999; pp. 1636-1638.	
	BR	Luker, Gary D., et al.; "Ghosting of Pulmonary Nodules With Respiratory Motion: Comparison of Helical and Conventional CT Using an In Vitro Pediatric Model"; *AJR:167*; November 1996; pp. 1189-1193.	
	BS	Li, Debiao, et al.; "Coronary Arteries: Three-dimensional MR Imaging With Retrospective Respiratory Gating"; *Radiology*; December 1996; Vol. 201; No. 3.; pp. 857-863.	
	BT	Kachelriess, Marc, et al.; "Electrocardiogram-correlated Image Reconstruction From Subsecond Spiral Computed Tomography Scans Of The Heart"; *Med. Phys. 25(12)*; December 1998; pp. 2417-2431.	
	BU	Tada, Takuhito, et al.; "Lung Cancer: Intermittent Irradiation Synchronized With Respiratory Motion-Results Of A Pilot Study"; *Radiology*; June, 1998; Vol. 207; No. 3; pp. 779-783.	
	BV	Solberg, Timothy D., et al.; "Feasibility of Gated IMRT"; 3 pps.	
	BW	Wong, John W., et al.; "The Use Of Active Breathing Control (ABC) To Reduce Margin For Breathing Motion"; *Int. J. Radiation Oncology Biol. Phys.*; 1999; Vol. 44; No. 4; pp. 911-919.	
	BX	Mageras, Gig, et al.; "Initial Clinical Evaluation Of A Respiratory Gating Radiotherapy System"; *Dept. of Medical Physics, Memorial Sloan-Kettering Cancer Center*, New York; 4 pps.	
	BY	Yorke, Ellen, et al.; "Respiratory Gating Of Sliding Window IMRT"; *Dept. of Medical Physics, Memorial Sloan-Kettering Cancer Center, New York*; 4 pps.	

Examiner Signature		Date Considered	

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Sheet 3 of 6

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Application Number	10/678,839
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Art Unit	Not Yet Assigned
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Attorney Docket Number	129836

NON PATENT LITERATURE DOCUMENTS

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	CA	Keatley, Eric, et al.; "Computer Automated Diaphragm Motion Quantification in a Fluoroscopic Movie"; *Dept. of Medical Physics, Memorial Sloan-Kettering Cancer Center*, New York; 3 pps.	
	CB	Kubo, H. Dale, et al.; "Breathing-Synchronized Radiotherapy Program at the University of California Davis Cancer Center"; *Med. Phys.* 27(2); February 2000; pp. 346-353.	
	CC	Iwasawa, Tae, et al.; "Normal In-Plane Respiratory Motion of the Bilateral Hemidiaphragms Evaluated By Sequentially Subtracted Fast Magnetic Resonance Images"; *Journal of Thoracic Imaging*; 1999; Vol. 14, No. 2; pp. 130-134.	
	CD	Kim, W.S., et al.; "Extension of Cardiac and Respiratory Motion Cycles by Use of Projection Data and Its Applications to NMR Imaging"; *Magnetic Resonance in Medicine 13*; 1990; pp. 25-37.	
	CE	Woodard, Pamela K., et al.; "Detection of Coronary Stenoses on Source and Projection Images Using Three-Dimensional MR Angiography With Retrospective Respiratory Gating: Preliminary Experience"; *AJR:170*; April 1998; No. 4; pp. 883-888.	
	CF	Sinkus, Ralph, et al.; "Motion Pattern Adapted Real-Time Respiratory Gating"; *Magnetic Resonance in Medicine 41*; 1999; pp. 148-155.	
	CG	Weiger, Markus, et al.; "Motion-Adapted Gating Based on k-Space Weighting For Reduction of Respiratory Motion Artifacts"; *Magnetic Resonance in Medicine 38*; 1997; pp. 322-333.	
	CH	Wang, Yi, et al.; "Implications For The Spatial Resolution in Coronary Imaging"; *Magnetic Resonance in Medicine 33*; 1995; pp. 713-719.	
	CI	Ritchie, Cameron J., et al.; "Predictive Respiratory Gating: A New Method To Reduce Motion Artifacts on CT Scans"; *Radiology*; 1994; pp. 847-852; Vol. 190; No. 3.	
	CJ	Kubo, H. Dale, et al.; "Potential and Role of a Prototype Amorphous Silicon Array Electronic Portal Imaging Device in Breathing Synchronized Radiotherapy"; *Med. Phys. 26(11)*; November 1999; pp. 2410-2414.	
	CK	Kubo, Hideo D., et al.; "Respiration Gated Radiotherapy Treatment: A Technical Study"; *Phys. Med. Biol.* (1996) Vol. 41; pp. 83-91.	
	CL	J.M. Balter et al.; "Uncertainties In CT-Based Radiation Therapy Treatment Planning Associated With Patient Breathing"; *Int. J. Radiat. Oncol., Biol., Phys.* 36; pp. 167-174 (August 1996).	
	CM	S.C. Davies et al.; "Ultrasound Quantitation Of Respiratory Organ Motion in The Upper Abdomen"; *Br. J. Radiol.* 67; pp. 1096-1102 (November 1994).	
	CN	R.L. Ehman et al.; "Magnetic Resonance Imaging With Respiratory Gating: Techniques and Advantages"; *Am. J. Roentgenol* 143; pp. 1175-1182 (December 1984).	
	CO	H. Frölich et al.; "A Simple Device For Breath-Level Monitoring During CT"; *Radiology* 156; p. 235 (July 1985).	
	CP	R.M. Henkelman et al.; "How Important Is Breathing In Radiation Therapy Of The Thorax?"; *Int. J. Radiat. Oncol., Biol., Phys.* 8; pp. 2005-2010 (November 1982).	

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Sheet 4 of 6

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	CQ	M.B.M. Hofman et al.; "MRI Of Coronary Arteries: 2D Breath-Hold vs. 3D Respiratory-Gated Acquisition"; *J. of Comp. Assisted Tomography* 19; pp. 56-62 (Jan./Feb. 1995).	
	CR	G.J. Kutcher et al.; "Control, Correction, and Modeling Of Setup Errors and Organ Motion", *Semin. Radiat. Oncol.* 5; pp. 134-145 (April 1995).	
	CS	J. Hanley et al.; "Deep Inspiration Breath-Hold Technique For Lung Tumors: The Potential Value of Target Immobilization And Reduced Lung Density In Dose Escalation"; *Int. J. Radiat. Oncol., Biol. Phys.* 45; pp. 603-611 (October 1999).	
	CT	L.S. Johnson et al.; "Initial Clinical Experience With A Video-Based Patient Positioning System"; *Int. J. Radiat. Oncol. Biol. Phys.* 45; pp. 205-213; (August 1999).	
	CU	H.W. Korin et al.; "Respiratory Kinematics Of The Upper Abdominal Organs: A Quantitative Study"; *Magn. Reson. Med.* 23; pp. 172-178 (January 1992).	
	CV	H.D. Kubo et al.; "Respiration Gated Radiotherapy Treatment: A Technical Study"; *Phys. Med. Biol.* 41; pp. 83-91; (1996).	
	CW	H.D. Kubo et al.; "Potential And Role Of A Prototype Amorphous Silicon Array Electronic Portal Imaging Device In Breathing Synchronized Radiotherapy"; *Med. Phys.* 26; pp. 2410-2414; (November 1999).	
	CX	C.E. Lewis et al.; "Comparison Of Respiratory Triggering And Gating Techniques For The Removal Of Respiratory Artifacts In MR Imaging"; *Radiology* 160; pp. 803-810; (September 1986).	
	CY	D. Li et al.; "Coronary Arteries: Three-Dimensional MR Imaging With Retrospective Respiratory Gating"; *Radiology* 201; pp. 857-863 (December 1996).	
	CZ	M.A. Moerland et al.; "The Influence Of Respiration Induced Motion Of The Kidneys On The Accuracy Of Radiotherapy Treatment Planning, A Magnetic Resonance Imaging Study", *Radiotherapy Oncol.* 30, pp. 150-154 (1994).	
	DA	K. Ohara et al.; "Irradiation Synchronized With Respiration Gate"; *Int. J. Radiat. Oncol., Biol. Phys.* 17; pp. 853-857; (October 1989).	
	DB	J.N. Oshinski et al.; "Two-Dimensional Coronary MR Angiography Without Breath Holding"; *Radiology* 201; pp. 737-743; (December 1996).	
	DC	C.R. Ramsey et al.; "A Comparison Of Beam Characteristics For Gated And Nongated Clinical X-Ray Beams"; *Med. Phys.* 26; pp. 2086-2091; (October 1999).	
	DD	C.R. Ramsey et al.; "Clinical Efficacy Of Respiratory Gated Conformal Radiation Therapy", *Medical Dosimetry* 24; pp. 115-119; (1999).	
	DE	F. Lethimonnier et al.; "Three-Dimensional Coronary Artery MR Imaging Using Prospective Real-Time Respiratory Navigator and Linear Phase Shift Processing: Comparison With Conventional Coronary Angiography", *Magn. Reson. Imaging* 17; pp. 1111-1120; (1999).	
	DF	R.J. van Geuns et al.; "Magnetic Resonance Imaging Of The Coronary Arteries: Clinical Results From Three Dimensional Evaluation Of A Respiratory Gated Technique"; *Heart* 82; pp. 515-519; (October 1999).	

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	DG	C.J. Ritchie et al.; "Predictive Respiratory Gating: A New Method To Reduce Motion Artifacts On CT Scans"; *Radiology* 190; pp. 847-852; (March 1994).	
	DH	R.D. Rogus et al.; "Accuracy Of A Photogrammetry-Based Patient Positioning and Monitoring System For Radiation Therapy"; *Med. Phys.* 26; pp. 721-728; (May 1999).	
	DI	K. Cho et al.; "Development Of Respiratory Gated Myocardial SPECT System", *J. Nucl. Cardiol.* 6; pp. 20-28; (Jan./Feb. 1999).	
	DJ	C.S. Ross et al.; "Analysis Of Movement Of Intrathoracic Neoplasms Using Ultrafast Computerized Tomography"; *Int. J. Radiat. Oncol., Biol., Phys.* 18; pp. 671-677; (March 1990).	
	DK	V.M. Runge et al.; "Respiratory Gating In Magnetic Resonance Imaging at 0.5 Tesla"; *Radiology* 151; pp. 521-523; (May 1984).	
	DL	T.S. Sachs et al.; "Real-Time Motion Detection In Spiral MRI Using Navigators", *Magn. Reson. Med.* 32; pp. 639-645; (November 1994).	
	DM	L.H. Schwartz et al.; "Kidney Mobility During Respiration"; *Radiother. Oncol.* 32; pp. 84-86; (1994).	
	DN	M. Paivansalo Suramo et al.; "Cranio-caudal Movements Of The Liver, Pancreas And Kidneys In Respiration", *Acta Radiol. Diagn.* 2; pp. 129-131; (1984).	
	DO	C.R. Ramsey et al.; "Clinical Efficacy Of Respiratory Gated Conformal Radiation Therapy"; *Med. Dosim.* 24; pp. 115-119; (1999).	
	DP	J.W. Wong et al.; "The Use Of Active Breathing Control (ABC) To Reduce Margin For Breathing Motion"; *Int. J. Radiat. Oncol., Phys.* 44; pp. 911-919; (July 1999).	
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Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 6 of 6

Complete if Known	
Application Number	10/678,839
Filing Date	October 3, 2003
First Named Inventor	Toan T. Le et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	129836

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T [2]
	DW	G.S. Mageras et al.; "Respiratory Motion-Induced Treatment Uncertainties"; *Patras Medical Physics 99 – VI International Conference On Medical Physics, Monduzzi Editore*; pp. 33-39; (September 1999).	
	DX	G.S. Mageras; "Interventional Strategies For Reducing Respiratory-Induced Motion In External Beam Therapy"; *The Use of Computers In Radiation Therapy XIIIth International Conference, Heidelberg, Germany*; pp. 514-516; (May 2000).	
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